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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

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February 6, 2003

Mr. Roy Schepens, Manager
Office of River Protection
United States Department of Energy
P.O. Box 450, MSIN H6-60
Richland, Washington 99352

RECEIVED
FEB 18 2004
EDMC

Dear Mr. Schepens:

Re: Double Shell Tank (DST) Part B Permit Application, Revision Rev. 0b, DOE/RL-90-39, submitted to the Washington State Department of Ecology on August 29, 2003

Re: Letter to R.J. Schepens, USDOE, from B. K. Jentzen, Ecology, "Receipt of Part B Permit Application for the DST System", dated September 25, 2003

The Washington State Department of Ecology (Ecology) reviewed the DST Part B Permit Application Rev. 0b and is providing the enclosed Notices of Deficiency (NODs). In accordance with the enclosed schedule, Ecology will receive the United States Department of Energy's (USDOE) response to the NODs by June 08, 2004.

Ecology is hopeful that the NODS provided will aid the USDOE in their efforts to submit a complete application so a final permit can be granted for the DST system. Ecology will perform a completeness review of the permit application in Box 10 (see attached schedule).

Ecology must grant a Part B Permit before waste from the DSTs is transferred to the Waste Treatment Plant. If you have any questions regarding this letter, please contact, me at (509) 736-5707 or Jeff Lyon (509) 736-3098.

Sincerely,

Brenda K. Jentzen
Permit Lead, Double Shell Tank System
Nuclear Waste Program

BKJ:lkd
Enclosures
cc: see next page

Mr. Roy Schepens
February 6, 2004

cc: Brad Erlandson, BNI
Edward Aromi, CHG
Chris Kemp, CHG
John Bates, FH
Jackie Hanson, INNOV
Todd Martin, HAB
Stuart Harris, CTUIR
John Cox, CTUIR
Pat Sobotta, NPT
Russell Jim, YN
Ken Niles, ODOE
Al Conklin, WDOH

cc/enc: Richard McNulty, ORP
Administrative Record: DST and Tank Waste Storage
Environmental Portal, LMSI

Double-Shell Tank Schedule

ID	Task Name	Duration	Start	Finish	2002	2003	2004	2005	2006
					'02	'03	'04	'05	'06
1	Internal CHG Disposition of NOD Comments	42 days	1/28/02	3/10/02					
2	Information Discussions with Ecology to disposition Rev. 0 (1991) comments	90 days	3/11/02	6/8/02					
3	Update DST Part B Permit Application	329 days	6/9/02	5/3/03					
4	Certification Process CHG/ORP/RL	120 days	5/4/03	8/31/03					
5	Target FFCA M-20 Milestone	1 day	8/31/03	8/31/03					
6	Submit Part B Permit Application (Box 1)	0 days	8/29/03	8/29/03					
7	Rev. 0b Ecology Review - Certified Application (Box 2)	165 days	8/29/03	2/9/04					
8	Rev. 0b DOE Response (NOD Response Table) (Box 3)	120 days	2/10/04	6/8/04					
9	Rev. 0b Ecology Review Response Table (Box 4)	120 days	6/9/04	10/6/04					
10	NOD Workshop to Resolve Issues (Box 5)	210 days	10/7/04	5/4/05					
11	DOE ORP/RL Issue Revision 1 (Box 6)	120 days	5/5/05	9/1/05					
12	Rev. 1 Ecology Review/Issue NODs (Box 7)	60 days	9/2/05	10/31/05					
13	Rev.1 Project Managers Issue Resolution (Box 8)	30 days	11/1/05	11/30/05					
14	DOE ORP/RL Page Change Revisions (Box 9)	60 days	12/1/05	1/29/06					
15	Ecology Prepare Draft Permit/Permit Modification and Completeness Review (Box 10)	60 days	1/30/06	3/30/06					
16	Public Notification (Box11)	30 days	3/31/06	4/29/06					
17	Public Review (Box 12)	90 days	4/30/06	7/28/06					
18	Public Hearing (if requested) (Box 13)	0 days	7/28/06	7/28/06					
19	Issue Permit or Permit Modification (Box14)	15 days	7/29/06	8/12/06					

Project: DST Schedule
Date: 2/5/04

Task



Rolled Up Task



External Tasks



Progress



Rolled Up Milestone



Project Summary



Milestone



Rolled Up Progress



Group By Summary



Summary



Split



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No.	Position in Documents	Comments/Response Miscellaneous	Regulatory Citation
1	Forward, Chapters 1,2,3,4,5	Delete the paragraph in the forward and chapters 1, 2, 3, 4, and 5 of the application discussing the Atomic Energy Act of 1954 and replace with: "Where information regarding treatment, management, and disposal of the radioactive source, byproduct material and/or special nuclear components of mixed waste (as defined by the Atomic Energy Act of 1954, as amended) has been incorporated into this permit, it is not incorporated for the purpose of regulating the radiation hazards of such components under the authority of this permit modification or chapter 70.105 RCW."	WAC 173-303-806(4)(xix)
2	Application Checklist	Remove or correct the application checklist that was submitted with the application. The checklist is inaccurate.	
3	General	<p>On August 31, 2000, the Tri-Parties entered into a Framework Agreement addressing the regulatory framework for disposal of TSCA-regulated PCB remediation waste in Hanford tank wastes. A key principle established in this agreement is that "The federal Resource Conservation and Recovery Act [...] as implemented through approved State programs [...] is] expected to be the key regulatory drivers for tank waste retrieval, transfers, pretreatment [...]. The framework document intends that the principle regulatory driver for management and disposal of tank wastes, and the basis for the anticipated TSCA risk-based disposal approval, will be the Hanford site-wide RCRA permit, specifically including those parts addressing the DST tank system, the 242-A Evaporator, the Effluent Treatment Facility and the Waste Treatment Plant.</p> <p>To support effective implementation of the Framework Agreement DST permit conditions must consider compliance with RCRA standards with respect to polychlorinated biphenyls, defined as a dangerous waste constituent via WAC 173-303-9905. In some instances, such as closure performance standards and waste analysis/waste acceptance plans, specific consideration of PCB constituents is likely to be warranted. On other instances, training plans, for example, general requirements that do not specifically address PCBs may be adequate to demonstrate protection of human health and the environment.</p> <p>Ecology expects that the DST permit applicants review the permit application to insure that all aspects of waste management and the permit application appropriately demonstrate protection of human health and the environment with respect to PCBs.</p>	Hanford PCB Framework Agreement
4	General	A description of the Notification System and description of the procedure (TFC-ESHQ-ENV-FS-C-01) requirements needs to be added to the DST permit.	

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No.	Position in Document	Comments/Response SEPA Check list	Regulatory Citation
1	General - SEPA	<p>Provide a State Environmental Policy Act (SEPA) checklist that includes analyses of Double Shell Tank (DST) closure and post-closure or evidence that the Washington State Department of Ecology and the U.S. Department of Energy, Office of River Protection have agreed that an Environmental Impact Statement (EIS) is appropriate. The SEPA checklist is required to be submitted to Ecology with a permit application, unless Ecology and the permittee agree that an EIS is required, SEPA compliance has been completed, or SEPA compliance has been initiated by another agency. The Tank Waste Remediation System EIS did not address the full scope of the activities included in Rev. 0b of the Double Shell Tank Part B permit application (i.e., closure); therefore, additional analyses of the environmental and public health impacts of closing the DST farms must be addressed. Also, If DOE chooses to submit the 1991 SEPA checklist, the checklist will need to be updated to reflect the current facility.</p> <p>(Some examples of the deficiencies in the 1991 SEPA checklist are: Under A.8 Environmental information, no mention of the TWRS EIS and supplements. Under A.9 references to the Hanford Waste Vitrification Plant, the PUREX Permit, the B Plant Permit, and the Grout Facility permit should be omitted. Under A. 10, update the air permit. Update item A. 11 to omit disposal of LAW as grout in the vaults. Update item A. 11 to reflect transfer lines between areas, equipment to be removed from service, etc.)</p>	WAC 173-802-060(1)

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No.	Position in Document	Comments/Response Chapter 1- Part A	Regulatory Citation
1	Chapter 1 General	Part A, Form III, 204-AR Waste Unloading Station, Cutaway View: Check piping exiting the facility labeled as UQW-702. Should this line be LOQW-702?	
2	III. B Part A form 3, DST Page 2	Account for the difference between what was indicated on Rev. 10 and Rev. 11 in Process Design Capacity amounts.	
3	III. C Part A form 3, DST Page 2, 2nd paragraph	Explain change in operational dates.	
4	III C. Part A form 3, DST Page 2, 2nd paragraph	Explain why the reference to waste received from tank truck transfers was removed	
5	III C. Part A form 3, DST Page 2, 3rd paragraph	Delete sentence after '242 A Evaporator' and insert the sentence: The high-level mixed waste is accumulated in the DST System until the waste is transferred for treatment to the Hanford Waste Treatment Plant. The wording in the DST Part A on the description of waste must be consistent with the Tank Waste Remediation System, Final Environmental Impact Statement.	
6	III. C Part A form 3, DST Page 2, last paragraph	Account for differences in volumes.	
7	Part A form 3, DST Page 2, Tanks Table	Reinsert deleted photos, maps, and tanks: 241-EW-151, 244-BX, 244-TX, 244-U, 244-A. You may indicate tanks to be taken out of service, close them by following WAC 173-303-830, -610, 640. The Part A form remains the same until you disposition the tanks.	
8	Part A form 3, DST Page 2, Tank Table	Correct spelling of "aging" and define aging and non-aging waste.	
9	Part A form 3, DST Page 6	<ul style="list-style-type: none"> Explain deletion of the 340 Complex and replacement with "tank farm" Reinsert "Leachate resulting from Hanford Facility land disposal surface impoundment operations." Reinsert "Multi source leachate (F039) is included as waste derived from nonspecific source wastes F001 and F005." 	
10	General	If your process design capacity is going to decrease, would your estimated annual quantity of waste decrease also? If yes, then change estimated annual quantity of waste to reflect this	

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No.	Position in Document	Comments/Response Chapter 1- Part A	Regulatory Citation
11	VII	Latitude and longitude needs to be filled out even though you state the information is available on attached photos, etc.	
12	IV. Section D.2. (Process Description)	Indicate "includes hazardous debris" for all waste streams	
13	General	Need attachment listing which lists the other Environmental Permits.	
14	204 AR Waste Unloading Station, Part A form 3.	Insert: Multi-source leachate (F039) is included as a waste derived from non-specific source wastes F001 and F005.	

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No.	Position in Document	Comments/Response Chapter 2	Regulatory Citation
1	Chapter 2 General	Provide a Table that shows the DST Tank System with the following headings: Tank Farm, Component Id #, General Description, Date of Construction, Description of Tanks System Equipment, Projected Final Disposition for Closure, Type of Environmental Monitoring, Operational Status (Active/Closed).	WAC 173-303-806(4)(a)(i)
2	Page 2-1 Paragraph 2	Revise the application to reflect the full scope of the activities to be conducted in the DSTs. The U.S. Department of Energy is requesting a permit to operate the post 2005 DST waste transfer system and that limited information will be provided about the pre-2005 system. Ecology notes that mention is not made of treatment and storage of tank waste in the tanks. The permit must address treatment and storage in the DSTs, as well as transfer of waste to the Waste Treatment Plant.	WAC 173-303-806(4)(a)(i)
3	Page 2-1 Paragraph 2	Remove the following statement from the application, "Limited information on the Pre 2005 system is being provided for completeness sake and to identify systems for closure." No options are provided in the Dangerous Waste Regulations for incomplete descriptions of the facility because the permittee wishes to close parts of it while other parts continue operation.	WAC 173-303-806(4)(a)(xxiii)
4	Page 2-1 Paragraph 6	Provide a detailed description of the 204 AR Waste Unloading Facility. The 204-AR Waste Unloading Facility is connected to the Tank Farms via an underground transfer line. That description is not complete because while underground lines from the 204-AR route waste to the Tank Farms, an underground line comes into the 204-AR to bring waste. In addition, the capability exists in the facility to remove waste from tanker trucks then treat the waste (raise the pH) and route it to the Tank Farms.	WAC 173-303-310 and WAC 173-303-395(6)
5	Page 2-1 Paragraph 5	Expand the description of the DST tank farms to include ancillary equipment. Paragraph 5 describes the 6 DST tank farms as comprised of a certain number of tanks, connected by piping. This general description is not complete, because it does not include a reference to other ancillary equipment (e.g., in tank farm piping, receiver tanks, transfer valve pits).	WAC 173-303-806(4)(a)(i)
6	Page 2-1 Paragraph 7	Remove the Atomic Energy Act (AEA) assertion from this chapter. Listing the U.S. Department of Energy's assertion with regard to the AEA in Chapter 13 is sufficient to allow Ecology permit writers to review the applicability. As stated elsewhere in these comments, the discussion of applicability of other State and Federal regulations is required to be included in the permit; however, this section is not appropriate. See comments on Chapter 13.	WAC 173-303-806(4)(xix)
7	Page 2-1 Section 2.1.1 Paragraph 5	Provide Ecology information from the tank closure EIS showing any significant impacts to the environment and public health resulting from the closure of the DST components to be closed with the SSTs. Section 2.1.1, paragraph 5 asserts that certain DST components will be included in the SST Closure Plan and closed with the SSTs.	WAC 197-11-055(2)(c)

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No.	Position in Document	Comments/Response Chapter 2	Regulatory Citation
8	Page 2-1 Line 36	Some discussion of area designation and interface with the site-wide permit needs to be made here. That is, define "600 Area" and "200 Area."	
9	Page 2.2 Section 2.1.1 Line 11-17	This paragraph is in quotes and is apparently a reference from some other source. Please specify this document.	
10	Page 2-2 Section 2.1.1 line 32 - 35	Rewrite this paragraph as follows: These lists (1A and 5) and sketches (B227) define the DST TSD waste transfer unit boundary for operations of the current DST system, Pre-2005 DST system and the Post-2005 system. The list in appendix 11B identifies which of the Pre-2005 components will be closed with the SST closure plan or DST closure plan.	
11	Page 2-2 Paragraph 6	Describe cathodic protection systems in Chapter 2 and show on drawings. Ecology considers cathodic protection and ventilation as critical systems. Paragraph 6 states that cathodic protection systems and ventilation systems are not shown on drawings because they are supporting systems. The same paragraph contains an assertion that all DST systems are fully described in the permit application. Cathodic protection systems can be considered as part of the equipment used to provide external corrosion protection of tank systems; therefore, they must be described in the Part B application and shown on drawings.	WAC 173-303-806(4)(c)(v)
12	Page 2-3 Line 1 - 16	This section does not talk about or list all of the ancillary equipment used in the tank farms such clean-out-boxes, catch tanks, double-contained receiver tanks, inactive miscellaneous underground storage tank (IMUST), hose-in-hose transfer lines (HIHTLs), and the long-length equipment. It is difficult to ever have a list that is all inclusive therefore a statement needs to be made that the list includes, but is not limited to, the following items.	
13	Page 2-3 Line 19	Replace figure 2-1 with a more detailed drawing. Please show the differences in the double shell tank. As built drawing would be the best.	
14	Page 2-4 Section 2.1.2.2 Paragraph 5	Identify the location of transfer pipelines that carry waste from the DSTs to treatment and storage units in the 200E and 200W. Ecology is aware of construction efforts to route lines from the DSTs to the Waste Treatment Plant in the 200 East Area, but unaware of lines that transport waste FROM the DSTs to such units in the West Area.	WAC 173-303-806(4)(c)(iv)
15	Page 2-5 Line 1-7	Explain the description of stainless steel pipe(s) in concrete encasement. Concrete encasements are non-compliant lines. The line must be double contained. Are these lines in service? If Ecology has reviewed these concrete encased lines and chose to use enforcement discretion provide a reference to the official transmittal.	

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No.	Position in Document	Comments/Response Chapter 2	Regulatory Citation
16	Page 2-5 Paragraph 4	Correct the statement in Paragraph 4 to state that 241-AZ-151 will not be addressed by June 2005 and inform Ecology of any other catch tanks that will not be removed from service by June 2005. Paragraph 4, catch tanks states that all catch tanks are non-compliant and will be removed from service by June 2005. Section 4.3.6 is referenced; however, the text in that section discusses the Project E-525 scope, catch tank/bypass, which identifies two inputs to the 241-AZ-151 that will remain in service after June 2005 and need to be addressed.	
17	Page 2-5 Line 12	Provide the following information. Where are the swab risers located and in what lines? How often are they sampled?	
18	Page 2-5 Line 16-17	Where is the discussion (as stated on line 17) in chap. 4 section 4.1.2.1.3.1.1 which has the detail on the valve pits? This section does not exist. Correct with the appropriate section.	
19	Page 2-5 Line 35	Section 4.1.1.6.5 that is referenced does not exist. Correct with the appropriate section.	
20	Page 2-6 Section 2.1.2.2	Include in this section mixer pumps and mixing. Mixer pumps are used to control the release of trapped gas and to mobilize solids, both are forms of treatment. Both must be performed to meet WAC 173-303-395 requirements.	WAC 173-303-395
21	Page 2-6 Section 2.1.2.2	Include in this section the control system (pump interlocks, system response time, etc.).	
22	Page 2-6 Section 2.1.2.2 Paragraph 5	Chap 2, pg 2-6, Para 5, Section 2.1.2.2: Verify if steam coils were used to prevent steam "bumps" due to the addition of boiling waste to cooler tank liquid. Describe what bumping was and its effect on tanks.	
23	Page 2-6	Inform Ecology of plans to use the circulators, as well as impacts to operation that arise from leaving them in the tanks during waste retrieval. No statement is made about the use of the air lift circulators in the future, plans to remove the circulators, or the impact of those circulators out of service on the use of the DSTs.	
24	Page 2-6	Provide information on the condition of steam coils and impact on DST waste transfers.	
25	Page 2-6 Line 13	The section referenced for DST system pits is inaccurate. Section 4.1.3 is Post 2005 system. Correct with the appropriate sections.	
26	Page 2-6 Line 36-37	The statement that, "tank farm pipeline refers to pipeline used to distribute waste within an individual tank farm" does not appear to be accurate. Other lines are considered DST pipeline which are not located within a particular tank farm boundary (e.g. cross site transfer line). Rewrite this sentence to accurately reflect all pipeline that are within the DST system.	
27	Page 2-6 Section 2.1.2.4 Line 49	Please elaborate on exactly how the ventilation system is used to meet WAC 173-303-395 requirements: e.g., removal and/ or dispersion of toxic gases, mists, particulates and flammable gas.	WAC 173-303-395

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No.	Position in Document	Comments/Response Chapter 2	Regulatory Citation
28	Page 2-7 Line 1.	Justify the statement that, " the negative pressure in the tanks prevents the escape of untreated dangerous and/or radioactive gases to the atmosphere." Is the text in the application indicating that gases never escape from the Double Shell Tanks?	
29	Page 2-7 Line 8	Describe the filtration system and what the filtration system is capable of filtering.	
30	Page 2-7 Section 2.1.3	Clarify the uses of the 204-AR as planned after FFY 2005. Section 2.1.3 states that the 204-AR Facility can accept waste from tanker trucks or rail cars. The facility as currently configured does not accept waste from rail cars, although it has in the past. It is unclear if this description is intended to notify Ecology that 204-AR will be receiving waste via rail cars after Federal Fiscal Year 2005.	
31	Page 2-8	Describe the mechanism used to adjust the waste pH (injection during transfer to the DSTs). Provide this information in Chapter 4. Section 2.1.3 states that the pH of the tank waste is adjusted when waste is at a pH of 12 or less to meet the acceptance criteria of the DSTs.	
32	Page 2-9 Line 10-11	Is this accurate? Are the DCRTs remaining in service past 2005?	
33	Page 2-9 Line 10-11	The sentence states that we need to see Section 2.1.4 in Section 2.1.4. What are you trying to say?	
34	Page 2-9 Line 18-19	What is the current specific gravity being sent to the DSTs? Where is this information in the permit application?	
35	Page 2-9 Line 21-23	This paragraph states the DST waste will be sent to another waste management unit for treatment. Isn't this the Waste Treatment Plant? Be specific and give detail. Replace "another waste treatment management unit" with "Waste Treatment Plant".	
36	Page 2-11 Section 2.1.6	Please add that the tank farms must prevent releases to the atmosphere in accordance with WAC 173-303-806(4)(a)(viii)(e & f) and -610 (5)(e)	WAC 173-303-806(4)(a)(viii)(e & f) WAC 173-303-640(5)(e)
37	Page 2-12 Section 2.1.7	Under other environmental permits: State which permits are required to support the DST in this section and provide the Environmental Permitting Status Report and all the updates in this document.	
38	Page 2-12 Section 2.1.8	Add the sentence: The project schedules are provided on pages F2-3, F2-4, F2-5, and F2-6. The project schedules will be provided to Ecology as updates occur.	
39	Page 2-12 Section 2.2	Revise paragraph to state that: As DST components are taken out-of-service, Ecology will be notified. A closure schedule for these components must be supplied in the closure plan.	

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No.	Position in Document	Comments/Response Chapter 3 & Appendix 3A	Regulatory Citation
1	Chapter 3 Appendix 3A Page 12, Section 3.0	Identify the parameters for each dangerous waste, or non-dangerous waste. Table 3-1 does not identify specific analytes.	WAC 173-303-300 (5) (a)
2	Appendix 3A Page 13, Section 3.4	Identify all the waste codes accepted in the DST system. The DST system accepts more than ignitable and reactive waste. Section 2.1 states that all waste currently in the DST system has been assigned the same dangerous waste codes. All the codes identified in the DST system Part A, Form 3 Permit Application apply.	WAC 173-303-395
3	Appendix 3A Page 19, Section 4.0	Identify sampling methods. Reference is made to maintaining sampling documents in the DST operating record, however, the regulation and general facility RCRA permit condition II.D.3, requires that the methods for obtaining representative samples for analysis be identified in the WAP.	WAC 173-303-300(5) (c)
4	Appendix 3A Page 19, Section 4.1.2	Identify specifically what document or documents control sampling. The first sentence states that sampling is controlled by the issuance of tank-specific SAPs; the statement is later made that in some instances, a SAP is not issued. Section 5.2 states that the waste stored in the DST system will follow the methods specified by applicable DQOs.	WAC 173-303-310 and WAC 173-303-395(6)
5	Appendix 3A Page 22, Section 5.0	Provide testing methods. Testing methods have not been identified.	WAC 173-303-(5)(b), 110 (2)(a)
6	Appendix 3A Page 23 Section 6.1	Since verification of every waste stream consists of initial sampling and analysis of all compounds on the list of analytes and periodic sampling and analysis to verify the waste has not changed; what analytical procedures and QA/QC protocol is used to verify this?	WAC 173-303-300(5)(b)(c)
7	Appendix 3A Page 23 Section 6.1.2	For verification of waste received by the DST system, what is the frequency of sampling when a discrepancy is identified?	WAC 173-303-300(5)(d)
8	Appendix 3A Page 23 Section 6.0	What are the sampling and analysis requirements for verification of incoming wastes since the greatest potential for compatibility problems is for mixing different incoming waste with waste already in the DST?	WAC 173-303-(5)(b), 110 (2)(a)
9	Appendix 3A Page 22 Section 5.2	The statement "Analytical methods will be selected from those routinely used by Hanford Site...." Does not adequately define method selection. State specifically what analytical methods are being utilized (i.e. SW-846)	WAC 173-303-110
10	List of Terms	Since the Hanford Federal Facility Agreement and Consent Order is frequently referred to as the Tri-Party Agreement (TPA); include this acronym in the list of terms.	
11	Section 2.0, line 3	The statement is made that incidental treatment occurs. Since incidental means unpredictable and minor, the treatment conditions described in 2.1 are intentional. Revise the text in section 2.0 to reflect the need for intentional treatment in DSTs.	

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No.	Position in Document	Comments/Response Chapter 3 & Appendix 3A	Regulatory Citation
12	Table 2.3	Although manifests are not involved in DST transfers, revise the text to indicate the appropriate waste transfer documentation in waste manifests or transfer data sheets.	
13	Section 2.1.1.6	Are waste transfer data sheets completed for DST-DST system transfers? The text is not clear. Clarify text	
14	Section 2.1.2.4 line 3	Revise the text to read The chemicals that are placed....	editorial
15	Section 2.2 3 rd Paragraph	Revise the following text. "The quantity of these solids sent to the DST system will depend on the criteria established for SST closure." The criteria for closure of SSTs with regards to quantity (volume) have been determined in milestone M-45-00. By knowing how much waste can remain in a SST and the volume currently in the tank, the quantity of solids sent to the DST can be determined.	TPA milestone M-45-00
16	Section 3.1	Do the selected parameters change from waste stream to waste stream?	
17	Section 3.2	Conflicting statements: Paragraph 2 states that the parameter selection is based on parameters pertaining to accepting wastes from sources outside the DST system and those concerning waste movement within the DST system. Section 3.1 states that sampling and analysis is required only for parameters considered important for safe handling. Are the selected parameters based only on safety or on waste acceptance criteria?	
18	Section 4.5 2 nd Paragraph	The chain of custody should include information indicating what analysis is required with the preferred method stated.	
19	Section 5.1	The laboratory performing analytical analysis should submit a laboratory quality assurance plan or manual prior to selection of the laboratory for waste analysis.	
20	Section 8.0	Certain DQO's are vital to the safe transfer of waste be it from SST to DST or DST to DST; no reference was made to any DQS specifically the Corrosion DQO and Compatibility DQO. Review your references and include all DQO related to the characterization and transfer of waste.	

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No.	Position in Document	Comments/Response Chapter 4	Regulatory Citation
1	Chapter 4 General	The application will need to be updated to reflect any operational changes that may occur during the application review cycle. As an example, when/if the operation limit for the DST level is re-rated an update will need to be submitted for the application to reflect the change.	
2	General	The organization of this chapter makes it very difficult to follow. It is hard to tell when the information is tank farm specific and when the information is for all of the tanks. (e.g., on page 4-45, the ENRAF seems to be only addressing the AP tank farm but it is not in the section that discussed the AP tank farm only.) Reorganize the chapter for clarity.	
3	General	The application does not address material balance and the posting of operators along the transfer routes while waste is being transferred. The DOE and contractors have stated that they consider these operations as part of leak detection. Add this information to the text.	
4	General	On secondary containment: Please explain any provisions available to flush pipeline secondary containment in the case of a leak. Describe the equipment that is available to flush secondary containment	
5	General	Demonstrate that each secondary containment system is capable of holding 120% of the waste that is within its catchment area at any specific time. This includes during transfers and misroutes.	
6	Chapter 4, Checklist Item D-2a	Provide the design and construction standards used to construct both the primary and secondary DST shells. Clarify if all the construction standards were followed, to include leak testing of both the primary and secondary shells. Ecology assumes the other informational requirements of the permit will be included in the integrity assessment (IA), as stated in the I. A. plan.	WAC 173-303-806(4), -640(2)(c)
7	Chapter 4, Checklist Item D-2b	<p>The detail in this section is insufficient and incomplete for assessing secondary containment and leak detection for the transfer system. Present the following information of each transfer line segment:</p> <ul style="list-style-type: none"> • line designation • profile and map view of pipe run (as built or design drawings) • elevations of the endpoints of the line segments • specific details on leak detector location, type, and spacing • leak volume and rate needed to trip leak detector, demonstrating your ability to detect a leak rate of 0.1 gal/hr within 24 hours. <p>Information is also needed on pipe life, e.g., number or leaks or pipe segment failures as a function of time. The permittee needs to establish or demonstrate what the "minimum detectable leak to the environment" is given the proposed design and operation of each individual subsystem. This will serve as the quantification of the word "any" in the regulations, which defines the system goal: to "...detect any leak ... (to the environment)...over the active life of the tank system?"</p>	WAC 173-303-806 (4) (c) (vii)

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No.	Position in Document	Comments/Response Chapter 4	Regulatory Citation
8	Chapter 4, Checklist Item D-2b, D-2a(2)	Define the type of assessment performed on the drain system and pits to determine for leak tightness. Project W-314 did appear to have leak tested portions of the pits after they were coated with polyurea, but this testing did not seem to extend to the drains. If not, what investigations will be performed to ensure the integrity of the drains and pits?	WAC 173-303-806(4)(c)(vii), WAC 173-303-640(3)(e)
9	Chapter 4 Section 4.1.5.4	Provide detail on the design and installation of the cathodic protection system. The text does not describe whether the tanks are protected, or just the transfer system. The text does not include any information on the system history that impacts design and life. If the system is field fabricated, provide documentation that the installation was supervised by an independent corrosion expert (WAC 173-303-640(3)(g), including the certification statement required in WAC 173-303-640(3)(h). Existing tank systems are required to document existing corrosion protection measures (WAC 173-303-640 (2)(c)(iii).	WAC 173-303-310 and WAC 173-303-395(6), WAC 173-303-640(3)(g), WAC 173-303-640(3)(h), WAC 173-303-640 (2)(c)(iii)
10	General	Provide to Ecology all drawings that are referenced in Chapter 4. All drawings, specifications, and engineering studies need to be stamped by a professional engineer.	
11	General, Section 4.1.11, Checklist Item D-2f	Describe the design of the tank system to prevent escape of DW or EHW (by fugitive emissions or via stack). For example, this must include potential of migration of gaseous and liquid wastes through unsealed conduits and any other pathways, methods to contain waste drippage and spillage during equipment removal and replacement, methods/procedures to deal with exhauster failure. Provide documentation that tanks waste is below the organic concentration of 10 percent by weight as required for an exemption from Subparts BB.	WAC 173-303-806(4)(c)(x), -640 (5)(e)-640(11)
12	General	Design of secondary containment and leak detection system: The assumptions regarding waste rheology must be discussed. Provide this information in the text. These include, but may not be limited to the following: assumed solids content of the waste, particle-size distribution of solids, specific gravity of solids and liquids phases, viscosity of fluid, yield stress of fluid, scouring velocity needed to prevent plugging, thermodynamic fluid properties including scale formation and formation of precipitates upon cooling. These data and specifications must be certified by a registered professional engineer (PE). This information is needed for design/ operation of the leak detection system with sporadically- place leak detectors (e.g., excluding cross-site transfer system).	-806(4)(a), (4)(c), -640(4)

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No.	Position in Document	Comments/Response Chapter 4	Regulatory Citation
13	General	Check-valve effect of solids in the presence of a leak: In the case of a primary pipe leak, a small hole can be temporarily plugged by solids, either through precipitation or the physical effect of a particle lodged in the hole. This effect would cause an inconsistent and irregular fluid flow into secondary containment through the hole. Discuss the effect of this phenomenon on leak detection system efficiency and efficacy. Discuss evidence for this phenomenon based on the leak history of SSTs. Discuss potential effects of this phenomenon on the operation, reliability, and durability of the piping system under operating conditions and over the life of the facility. The PE certifying design of the tank system must specify whether this effect will, or will not, adversely effect the required operation of the secondary containment and leak detection system, and will include all objective and verifiable evidence to this effect	-806(4)(a), (4)(c), -640(4)
14	General	Provide the plan and cross-section of each piping segment that is part of this permit. Provide current "as built" drawings. Each plan and profile must be based on as-built drawings and stamped by a Professional Engineer licensed in WA state. The plan and profile must include the location of leak detectors, pressure test risers, drains, pits, supports, thrust blocks, and all other pertinent details of construction.	-806(4)(a), (4)(c), -640(4)
15	General	Provide technical data, specifications, design calculations, and engineering studies (in conjunction with, and support of comments 10 above to show that the secondary containment and leak detection system is designed, installed, and operated to prevent any migration of waste out of the tank system at any time during the use of the tank system. The baseline or state-of-the-art leak rate to the environment is 0.1 gallons per hour. The description must not include assumptions that cannot be objectively verified and must be adequate to address each tank, piping segment, or appurtenance used to convey, store, treat, or control all waste phases including liquid, solid, and gaseous/ vaporous waste forms. The description must be certified by a registered professional engineer. If data does not exist, these limitations of design must be specified and can be allowed for submission on a case-by-case basis.	-806(4)(a), (4)(c), -640(4), OSWER 9483.00-3
16	General	In several locations in Chapter 4, it states that detailed description and listing of components are provided in Section 4.1.3 and Appendix 4C. The description on components is in Appendix 4B and 4C. Section 4.1.3 does not provide detail. Change throughout chapter 4 for accuracy.	
17	Page 4-1 Section 4.0 Line 21,22	The sentence that "as system components become isolated updated lists and/or sketches will be provided to Ecology" is not acceptable to Ecology. Isolating components is a closure action. Provide a schedule for closure of these items.	

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No.	Position in Document	Comments/Response Chapter 4	Regulatory Citation
18	Page 4-2 Section 4.1.1.1	Table 4-3 and 4-4: Define "safe shutdown" in context of waste storage and conveyance. Provide detailed description of procedures to be followed for a "safe shutdown" during various operating scenarios. Procedures need to describe how the system will be verified safe after such an event (e.g., stop pumping, flush lines, pressure test, etc.)	
19	Section 4.1.1.1, Page 4-2, Table 4-3 and 4-4	The claim is made that the heat generation rate is 100,000 BTU/h based upon 6 Ci/gal concentration in the waste. Please check these numbers. 6E6 Ci per tank, at 87 Ci/gram, 0.427 Watts/gram the heat generation is much higher at 7.6E8 BTU/h. If the calculation is in error, please correct it.	
20	Page 4-2 Section 4.1.1.1	Provide diagrams and as built drawings. The drawings in the Hanlon have more detail than figure 4-1. Drawings need to give enough detail. (Such as the location of the leak detectors)	
21	Page 4-3 Section 4.1.2:	This section advises that pre-2005 DST components are not covered under this permit. This is not an accurate statement. The permit application does address pre-2005 components, specifically isolation. Isolation is a closure action and all pre-2005 components must be address in the closure chapter.	
22	Page 4-3 Section 4.1.3.1:	Last paragraph in section appears to be redundant except for the last sentence. Delete last paragraph except for last sentence (add to previous paragraph).	
23	Page 4-3, Section 4.1.3.1	Paragraph 2 states that, "precipitation will not infiltrate into secondary containment." Explain what measures have been taken to prevent infiltration. Report whether infiltration occurs between the secondary hull and cement sheath of any tank (tertiary containment).	
24	Page 4-3 Section 4.1.3.2:	Second sentence in section is confusing. Sentence advises secondary containment for two categories of ancillary equipment will be discussed in the permit leaving the reader the impression there are more categories that will NOT be discussed. Clarify if there are categories of ancillary equipment that do not have secondary containment or that will not be discussed and why.	
25	Page 4-4, Section 4.1.3.2.1.1.2	Describe the leak detectors that are used in the valve pits and the volume of waste required to set off the alarm on the leak detectors.	
26	Page 4-4, Section 4.1.3.2.1.1.3:	This section references "an agreement with Ecology" to not require upgrades of annulus pump pits. Provide the agreement.	

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No.	Position in Document	Comments/Response Chapter 4	Regulatory Citation
27	Page 4-5 Section 4.1.3.2.1.2	Drain pits and their drains must be determined to not be leaking, or if leakage has occurred, that the system has not leaked during use. Please explain where these drains are, which have been tested or can be tested. Provide procedures for testing per -640(2)(a).	
28	Page 4-5 Section 4.1.3.2.1.2 Line 5	Line 5 states that drain pits are located on several tanks as described in Section 4.1.3.2.1.2. This statement occurs in Section 4.1.3.2.1.2. Where is the description on the location of drain pits?	
29	Section 4.1.3.2.1.3, line 15	Describe the use of "liquid steam" in breaking up and removing sludge.	
30	Page 4-5 Section 4.1.3.2.1.3 Line 13	Are the tanks noted in the text the only Double Shell Tanks with sluice pits? If not, describe all others.	
31	Page 4-5 Section 4.1.3.2.1.4	The text states that "feed pump pit-- provides dedicated lines for moving waste from the tank to specific unit." Where are these lines located? Provide detailed information.	
32	Page 4-5 Section 4.1.3.2.1.4.1	This section advises that, "non-compliant transfer lines will generally, be upgraded." : If upgrades are performed, they must reference the standards to which they will be upgraded (i.e. to WAC 173-303 and 40 CFR requirements). This decision should have already have been made. Please list the lines and their path forward to compliance or closure.	
33	Page 4-5, Section 4.1.3.2.1.4.1	DST transfer lines. Paragraph 2 of this section says that all transfer lines are, "...sloped so any liquid in the encasement will flow to a leak detector." Please provide design, installation and other records certified by a PE supporting to this statement. The documentation provided must include considerations related to the flow properties or rheology, solids content, scaling tendency, and nature of the waste with regard to effective operation of the leak detection and secondary containment system. per -806(4)(c), (4)(a), and -640(4)(b)	
34	Page 4-5, Section 4.1.3.2.1.4.1,	Paragraph 2 states that "most" transfer lines are cathodically protected. Specifically, state which lines are, and which are not cathodically protected as per certification by a licensed PE. This statement is consistent with Appendix 6, page APP 6A-39 where it states some piping may not meet NACE RP-0285 due to, "...adverse soil conditions, other metal structures... design constraints." Please explain this statement.	-806(4)(c), (4)(a), and -640(2)
35	Page 4-5 Line 35-36	The text states that, "unless determined to be necessary by analysis, the transfer systems are operated without the heat tracing system." What type of analysis makes this determination? Where is this information located? Give more information.	

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No.	Position in Document	Comments/Response Chapter 4	Regulatory Citation
36	Page 4-5 Line 38, 39	The text states that, "Older lines use a pipe(s)-in-concrete design." These lines are not compliant. The text needs to indicate that these lines will be coming out-of-service by 2005 or they are being upgraded. If Ecology has reviewed these pipes and is using enforcement discretion, provide a reference to the appropriate document/letter.	
37	Page 4-6 Line 6 - 8	The text states that, "direct-buried lines also are used to transfer waste between tank farms ... etc." What direct-buried lines are you asking to be permitted? These lines are non-compliant and are to be removed from service by 2005 or upgraded. If Ecology has reviewed these pipes and is using enforcement discretion, provide a reference to the appropriate document/letter.	
38	Page 4-6 Line 36-38	Remove this paragraph as it belongs in closure. Isolation is a closure action and according to the regulation must be closed within a specified time frame. A schedule for these components must be presented and approved by Ecology.	
39	Page 4-7 Line 21	Describe the "as is" position for valves?	
40	Section 4.1.3.2.1.4.2	Describe the leak detection system for the RCSTS.	
41	Page 4-8 Line 37-40	Please explain the statement that "liquid waste transfer operations are divided into two systems." Called saltwell waste and temporary transfer lines. What are you trying to say?	
42	Page 4-8 Line 46	(See Section 4.1.12 for details) Correct as this section does not exist.	
43	Page 4-8 Line 46-47	The statement that carbon steel lines are direct buried and will be closed under the SST closure plan is not correct. Only some of the DST system that is pre-2005 will be closed under the SST closure plan. Clarified for enforceability.	
44	Page 4-9 Line 16	The text states that, "transfer lines and routing structures for saltwell waste transfer operations are shown in Appendix 4B." Appendix 4B describes the whole DST transfer system. Where are the specifics for saltwell waste transfer operations?	
45	Page 4-9 Section 4.1.3.3.1.2	Clarify what the path forward is for the clean out boxes. If they are not going to be used past June 2005, then add that sentence to the text. Where is the information located on the leakage that has occurred in the clean out boxes? Present that information in Appendix 11A.	
46	Page 4-9 Line 41	See Section 4.1.4 for further details. Correct as Section 4.1.4.2.8 is clean out boxes.	

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No.	Position in Document	Comments/Response Chapter 4	Regulatory Citation
47	Page 4-11 Section 4.1.3.3.2.4	This section talks about direct buried lines and that only a few will remain in service past 2005. State the non-compliant direct buried lines that will remain in service past 2005. These lines must have a variance to continue operation. Ecology is only aware of 10 lines that are currently under consideration for a variance from secondary containment.	
48	Page 4-11 Section 4.1.3.3.2.5	This section advises that only one catch tank (AZ-151) may remain in service beyond 2005. This section notes that if the tank remains in service it will be "upgraded" and if not, it will be "bypassed." This description is too vague. This section should be revised to clearly state that if the tank remains in service it will be upgraded to WAC 173-303 and 40 CFR standards and if not, it will be stabilized and included within the closure plan (i.e. stabilization includes removing all liquids, isolating the unit, installing intrusion protection and some minimal monitoring until closed).	
49	Page 4-11 Line 24	Where is the detail on seal pots that is provide in Section 4.1.3. Provide detail on the seal pots.	
50	Page 4-12 Line 45-47	Clarify the DST components that are non-compliant and plan to continue operation past 2005.	
51	Page 4-14 line 19-20	Define what amount may leak before triggering an alarm.	
52	Page 4-14 and 4-15 Section 4.1.4.2.5	Clarify which are the direct-buried lines used to transfer waste. What are these lines used for (e.g., condensate, secondary containment drain lines)?	
53	Page 4-16 Section 4.1.4.2.8 subsection Primary Tank Leak Detection (comments on this section apply to all DST tank farm Primary Tank Leak Detection descriptions)	First paragraph in this section describes configuration of conductivity probe type leak detectors stating that the probes will be maintained at the "proper height" from the annulus floor. "Proper height" is an insufficient description of this location for this essential probe. Revise to add that the probes will be maintained at no more than ¼ inch from the annulus floor.	
54	Page 4-17 Line 40-44	It appears from the text that the leak-detection system as described is not functioning as designed. Clarify for enforceability.	

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No.	Position in Document	Comments/Response Chapter 4	Regulatory Citation
55	Page 4-17, line 46- 48	The combination check valve and floor drain assembly looks like a good way to operate the drains. Clarify if this assembly was tested in place upon installation since this tests both the pit and the check valve. Include whether this device requires inspection and how or why not. Include this device in the inspection schedule if necessary.	
56	Page 4-18, lines 11 through 13	Paragraph 2 on this page describes a lip or cofferdam to allow leakage to build-up and trigger the leak detector. This section needs to clarify if this lip has been installed where needed. Please also clarify whether the lip has a hole in it, as some of the SSTs have. If a hole exists in the lip it is not compliant.	
57	Page 4-18 Section 4.1.4.3, lines 33 & 34	Figure 4-1 implies it shows the "essential" information. This is not true because it does not show all the essential information. Delete the word "essential." This schematic is important for illustration but design drawing and calculations, and description of operating procedures are also needed to evaluate this permit application.	
58	Section 4.1.4.4.2 Lines 33 - 35	These sentences describe an "encasement hydrotest riser." Clarify if equipment allows for pressure testing secondary containment. Show detailed drawings, as always. Also, for each section where there is a reference to secondary containment, please describe what equipment exists, or has been designed, or is planned for testing secondary containment for the type of lines that exist at tank farms. Periodic pressure testing of secondary containment, and after a leak of the primary pipe, will be required as part of operations under secondary containment and leak detection per -640(4)(b). It is not required as part of an on-going integrity testing program per -640(2)(e) or (3)(b)	WAC 173-303-640(4)(b), (2)(e), and (3)(b)
59	Page 4-20 Lines 48 -50	The text states that, "the leak detector may not detect small amounts of leakage." Quantify the amount of waste that could leak before being detected.	
60	Page 4-35 Section 4.1.4.9 Lines 38 -41	This paragraph describes the use of mixer pumps in SY-101 as a means to control gas buildup. The use of mixer pumps is not described in procedures to prevent hazards or other parts of this chapter as a means of control for either hazardous or toxic emissions. Clarify if this statement is correct. Include a description of the procedures critical elements to prevent hazards.	
61	Page 4-37 Section 4.1.4.10.3 Lines 25-26	Again, as with other sections in this chapter, please describe what direct buried lines you are talking about. Is this the ones where the secondary containment does not penetrate the pit wall?	
62	Page 4-38 Section 4.1.4.11.1 Lines 24-25	Certainly the drains are part of the secondary containment system, but they must be testable and must be included in the integrity assessment. Certain drains, such as vertical drains may not need to be tested, but long drain systems with bends and mild (near vertical) slopes must be testable or otherwise monitored. Describe the secondary containment drains, which ones are available for testing, length and configuration (slope, bends, angles, etc.)	

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No.	Position in Document	Comments/Response Chapter 4	Regulatory Citation
63	Page 4-38 Section 4.1.4.11.3	Lines 41 through 43 discuss a plugged floor drain. What is plugging the floor drain? Is this an isolated drain, or plugged by waste. Please clarify.	
64	Page 4-38 Section 4.1.4.11.3 Lines 45 -47	I do not understand the sentence, "The Clean out Boxes (COBs) can contain... from any leakage..." What is this sentence supposed to say? Are the COBs contaminated? Will the COBs remain in service after 2005?	
65	Page 4-39 Section 4.1.4.12 Lines 12 -14	What is the purpose of the interchangeable leak detection pump? Is there liquid stored or infiltration into the pit that must periodically be removed? Certainly in the event of a leak from secondary containment into the pit a pump would need to be available. Clarify what the purpose of this pump is and whether it is used periodically to remove liquid from around the outside of the secondary hull that drains to this location. What does it mean that it is interchangeable?	
66	Section 4.1.5	What is said here is good except it misses the first fundamental requirement. State the purpose of this assessment is," For each tank system, the owner or operator must determine that the tank system is not leaking or unfit for use." Add this statement into the text.	WAC 173-303-640(2)(a)
67	Section 4.1.5.1	Describe how it will be determined that the secondary piping will not leak or is "unfit for use." Clarify if the newer lines have had both the primary and the secondary pressure tested before being put into service. The pressure testing regimen is part of the Integrity Assessment Plan.	
68	Section 4.1.5.1	This implies some direct-buried lines are part of the DST system. Are you referring to the potion of double-walled lines where the secondary does not pass through the pit wall? If Ecology agreed to anything about this (re: last sentence) a reference needs to be included here.	
69	Page 4-41 Line 39-40	The ages of the tank are not listed in Table 4-2. However, the dates when the tanks became operational are listed. Clarify text to reflect the Tables titles.	
70	Page 4-42 Line 8	Clarify where Section 4.1.3 gives detail on the monitoring and control system. Describe these systems.	
71	Page 4-42 Line 39 - 47	The information in this paragraph is no longer correct. The AY and AZ farms now have ENRAFs for leak detection. Change text to reflect the current leak detection system at the AY and AZ farms.	
72	Page 4-44 Line 4	Section 4.3.5 does not talk about new leak detection probes. Provide the information.	
73	Page 4-45 Line 22 - 29	Provide the information on ENRAFs for all the other double shell tanks or state how they differ. This information seems to only address the AP farm.	
74	Page 4-55 Section 4.2	This section references a "LR-56 truck". I think the LR-56 truck is long gone from Hanford. Correct the sentence for accuracy.	

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No.	Position in Document	Comments/Response Chapter 4	Regulatory Citation
75	General, Regarding Projects Page 4-62	Explain how the DST projects in this application relate to the M-48 DST integrity assessment. All DST system components must have an integrity assessment that has been signed by a certified Independent Qualified Registered Professional Engineer.	

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No.	Position in Document	Comments/Response Chapter 5	Regulatory Citation
1	Chapter 5, General Comment	<p>Previously, general RCRA Part B permit application informal comments were provided by Ecology regarding the placement of the post-closure groundwater monitoring program description. As the DST system is not a "regulated unit" (see WAC 173-303-040 definition), groundwater monitoring is not required. Therefore, the groundwater monitoring program description included in Chapter 5 of the RCRA Part B permit application is not required. In addition, and related to postclosure groundwater monitoring, WAC 173-303-640(8)(b) requires the owner/operator to first "demonstrate that not all contaminated soils can be practicably removed or decontaminated..." prior to performing post-closure care and monitoring. To date, the U.S. Department of Energy (USDOE) has not made this demonstration in relation to the DSTs. Therefore, a post-closure care and monitoring plan is not required at this time. As such, all post-closure groundwater monitoring program descriptions currently provided in Chapter 5 should be removed/deleted from the application.</p>	WAC 173-303-040, WAC173-303-640(8)(b)
2	General Comment	<p>Previously, general RCRA Part B permit application informal comments were provided by Ecology regarding Appendix 11A. These comments addressed the RCRA Part B permit applications deficiencies in relation to information provided regarding releases, potential contamination resulting from those releases, and the lack of characterization regarding the potential contamination resulting from those releases. Should it be determined that releases have occurred and/or characterization information indicates contamination has resulted from the operation of the DST system, Ecology may impose vadose zone and/or groundwater monitoring (Prior to closure and/or post closure) related to the DST system for the purpose of characterizing impact and/or monitoring contamination migration. The application must identify this scenario as one in which vadose zone and/or groundwater monitoring may be required. It is appropriate for this identification to be placed in Section 5. It is also appropriate that an identification be included that indicates vadose zone and/or groundwater monitoring (if required) would be imposed via RCRA corrective action authorities.</p>	

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No.	Position in Document	Comments/Response Chapter 5	Regulatory Citation
3	General Comments	<p>An additional scenario as one in which vadose zone and/or groundwater monitoring may be required is related to the design and adequacy of the DST system's secondary containment. To explain, regulatory requirements may be interpreted to mean the system must be capable of detecting the failure of both the primary and secondary containment, or, alternatively, the system could be capable of detecting <i>any</i> release of hazardous waste into secondary containment. It is also noted that USDOE guidance (Special Facilities DOE6430.1A 4-6-89) for typical confinement for radioactive liquid waste facilities includes tertiary barriers (which can include "soil barrier" which is defined as an engineered backfill material and natural setting surrounding the waste storage tanks with a monitoring capability available of detecting leakage from the storage tanks into the soil). During Ecology's processing of the DST RCRA Part B permit application, if it is concluded that the tank system is not designed or operated (as described in the DST draft Part B permit application) to provide a satisfactory level of leak detection to preclude unacceptable releases to the environment, vadose zone and/or groundwater monitoring may be imposed as a DST system operation condition. The application must identify this scenario as one in which vadose zone and/or groundwater monitoring may be required. It is appropriate for this scenario to be described in Section 5 of the DST RCRA Part B permit application.</p>	
4	General Comments	<p>An additional scenario as one in which vadose zone and/or groundwater monitoring may be required is related to the DST integrity assessment that will be performed to satisfy the Hanford Federal Facility Agreement and Consent Order (HFFACO) Milestone M-048-14. If the DST integrity assessment is found to provide insufficient information and/or assurances of the DST system's integrity during waste management and/or operation of the DST system, vadose zone and/or groundwater monitoring may be imposed to provide additional assurances of the DST's integrity during dangerous waste management and operation of the DST system. The application must identify this scenario as one in which vadose zone and/or groundwater monitoring may be required. It is appropriate for this scenario to be described in Section 5 of the DST RCRA Part B permit application.</p>	

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No.	Position in Document	Comments/Response Chapter 6	Regulatory Citation
1	Chapter 6, Section 6.3.2	Include text to reflect when and how often there is visual inspection of the emergency and safety equipment.	
2	Section 6.2.3.4	Include text to reflect when and how often the alarm panel inspection occurs. Referencing the appropriate appendix would suffice.	
3	Section 6.4.4	Control of air emissions: This section needs to include more detail to be useful. Please include much more detail on how emissions are actually controlled and provide data on releases of gaseous DW or EHW. Note that the word "control" generally refers to engineering controls in the context in which it is used. OSHA regulations also require engineering controls to be used "when feasible." The performance standards under RCRA also required a maximum level of control. Detail must be included in two additional places: waste characteristics needs to include the physical processes that lead to release of toxic emissions since such data is key to how engineering and administrative controls will be implemented, the history of releases is key to demonstrating the effectiveness of these controls implemented to-date all releases to air must be documented in this report. For example: if spontaneous bubble rise raises the level of air toxics in the dome space, how would monitoring be able to prevent exposures to humans given the sudden nature of such an occurrence? The effects of diffusion-driven processes, if these are sources of toxic emissions, the effect of tank operating processes need to be factored in. That is, mixer pumps could cause diffusion driven release process to increase because the concentration gradient changes drastically, and possibly because cavitation in the pumps causes lower vapor pressure components to be stripped out of the waste, tank filling generates aerosols, some components will be vaporized or concentrated above what may be expected or anticipated based upon present characterization, this may also cause reactions or effects that generate higher concentration of contaminants, or different contaminants, than expected (e.g., source of H ₂ S, measured in '93 per OR but not included as constituent of concern in later characterization plans).	per -300, -170, -070 to -110, -395
4	Section 6.4.4	<p>Section 6.4.4, page 6-9, lines 25- 28: In conjunction to references to "...numerous state and federal regulations," in reference to WAC 173-400, and -460 please include the statement that there are "no controls" for toxic gaseous releases on any of the tank farm stacks.</p> <p>Section 6.4.4, page 6-9, lines 25- 28: Please define TFC.</p> <p>Section 6.4.4, General Comment: This section does not describe the use of atmospheric dispersion and stack height to limit breathing-zone concentrations of gaseous air toxics. Whether dispersion is used intentionally or unintentionally, how the contractor controls the dispersive effect is important. Please include a description of how exclusion zones are established during a planned and unplanned Gas Release Event, and how the zones are monitored and controlled to protect human health. Please describe any instance when this-type of control may have failed in the past (e.g., gas release events SY-101 initial mixer pump startup, C-106 sluicing. Describe in detail the actions taken during successful (dilution and removal of SY-101 waste) and unsuccessful operations.</p> <p>Section 6.4.4, General Comment: The section describes monitoring, but does not describe the actions taken if constituents of concern or instruments register readings above acceptable levels while work is being conducted. Please</p>	WAC 173-303-395(1)(b) and -283(3)(i)

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		describe how tank farms are evacuated when readings indicate unacceptable contamination levels. Please indicate how work is stopped and conditions are made safe prior or during evacuation. Please indicate how many times since records were kept have the tank farms work been halted or hindered because of incidents of vapor release.	
5	Page 6-5 Section 6.2.3.6	Rename the section to Tank System - Response to leaks and spills. The title of Corrective Action implies that the regulations are from WAC 173-303-646.	
6	Chapter 6, Checklist Item F-1a(2)	Clarify what warning signs, if any, are associated with the DST system and are located outside of enclosed DST system areas.	WAC 173-303-310 and WAC 173-303-395(6)
7	Chapter 6, Checklist Item F-3a(4)	Clarify how sufficient flow, volume, and pressure for water and foam was determined, and if this was based upon hazard analysis. Reference the document where the hazard analysis was done. With regard to building sprinkler systems: provide specific details on the location of these systems (which buildings). Clarify if the facility has an approved water system plan as required under WAC 246-290 and the Safe Drinking Water Act.	WAC 173-303-806, -340(1), (2)
8	Checklist Item F-4(a), (b)	Describe how operations will prevent run-off from dangerous waste handling areas to other areas of the facility or environment during operations (e.g., large equipment removal and replacement). Examples would include spray ring devices for decon, flexible receiver to bag large waste out, etc.	WAC 173-303-806(4)(a)(viii)
9	Checklist Item F-4d	Clarify if the fire water system for fire hydrants has backup power.	WAC 173-303-806(4)(a)(viii) (D)
10	Checklist Item F-5	Clarify whether the tank system is already storing incompatible wastes that generate flammable and toxic gases and mists (vapors). Clarify if the degree of toxicity of the trapped gases in the waste as based on characterization and toxicological assessment of this specific phase. Then describe in detail how WAC 173-303-395(1)(b)(i), (ii), (iii), and (iv) will be complied with, including controls for flammability and controls to prevent uncontrolled toxic emissions.	WAC 173-303-100, WAC 173-303-395(1)(b)(i), (ii), (iii), (iv), WAC 173-303-640(10)
11	General	Clarify how the system will be designed and operated to prevent uncontrolled mists and gases that threaten human health and the environment.	WAC 173-303-640(10), WAC 173-303-395(1)(b)

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No.	Position in Document	Comments/Response Chapter 6	Regulatory Citation
12	Checklist Item F-2d(2)(b), F-4	For tanks and piping, if the primary containment starts leaking what immediate actions does USDOE intend to take? Besides the obvious initial action to shut down and prepare for or initiate emergency pumping, what other actions are planned? Clarify if the WAC requirement for immediate cleanup and repair, or closure of the failed component will occur. Clarify whether "interim stabilization" and "isolation" will occur. If the option to interim stabilize and isolate the component is planned, how will it be determined no contamination has occurred outside of secondary containment? Clarify if there are components of the SST system that were previously classified as DST components, but have failed, and were not immediately cleaned up. For each transfer segment, tank, pit, and drain show how the component will be operated to detect and prevent or mitigate "any" leak to the environment over the operating life of the facility. What is the minimum detectable leak to the environment under current design and operation strategies?	WAC 173-303-640(7), WAC 173-303-806(4)(a)(viii)

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No.	Position in Document	Comments/Response Chapter 7	Regulatory Citation
1	Chapter 7 7.2.5.1	<p>Replace 7.2.5.1 with the following text. "During the course of receiving dangerous and/or mixed waste at a Tanks Farm Facility, an unanticipated event could be discovered resulting in a discrepancy concerning the waste. Damaged or unacceptable shipments resulting from onsite transfers are not subject to WAC 173-303-370; however, discrepancies must be resolved in order to maintain proper records. Regardless of whether the waste is received as an off-site shipment or onsite transfer, the following actions are taken:</p> <ol style="list-style-type: none"> 1. Operations management is notified of the damaged or unacceptable waste to be received. 2. If the discrepancy results in a spill or release, actions described in Section 7.2.5 are taken. 3. The generating organization is notified of the discrepancy. 4. An operations representative, in conjunction with the generating organization, determines the course of action to resolve the discrepancy. 	
2	General	<p>The contingency plan, or related document, must contain a "description of the actions which facility personnel must take to comply with..." WAC...-350 and 360. The description of the procedures must contain sufficient detail to ensure the requirements of WAC can be met. Specifically, a detailed description of the planned response to a: tank dome collapse, leaking pipeline, leaking tank, and release to the atmosphere.</p>	-806(4)(a), - 350(3)(a)

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No.	Position in Document	Comments/Response Chapter 8	Regulatory Citation
1	General	Identify On-the-Job Training (OJT) needed and a description of the process/procedures for positions at Tank Farms. OJT is not listed.	

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No.	Position in Document	Comments/Response Chapter 11	Regulatory Citation
1	Chapter 11 General	The closure chapter is missing the detail required in a closure plan. See regulatory citations noted. Ecology stated in the previous informal discussion the closure plan should describe how a tank, pipeline, catch tank, diversion box, double contained receiver tank, etc. will be closed.	WAC 173-303-610 (3) & (8), WAC 173-303-640
2	General	Waste retrieval is a path to closure and it is considered a closure action. Therefore, describe how the DST's waste will be retrieved and transferred to the Waste Treatment Plant.	
3	General	At this time, there is no reason to assume that the DST system cannot be clean closed. The DST system appears to currently be sound and this assumption will be confirmed with the required certified integrity assessment (M-48). The regulation intended that facilities make every effort to clean close and only if clean closure cannot be achieved will landfill and post closure care be allowed for a nonregulated unit.	WAC 173-303-640 (8), WAC 173-303-610 (2), WAC 173-303-665 (6)
4	General	Too many references to the SST closure actions. This is an application for the DST system and it must meet required closure regulation and description for the DST system. References to the SST closure actions in the DST permit will require a permit modification to the DST permit when the SST closure actions change. Correct text to describe the DST system.	WAC 173-303-610 (3) & (8), WAC 173-303-640
5	General	Change text to include all required Washington Administrative Code (WAC) citations. Closure activities will include testing of contaminated environmental media to determine the extent of contamination according to WAC 173-303-610(2)(b). Soil clean up standards will comply with WAC 173-303-610(2).	WAC 173-303-610
6	General	Provide a closure strategy for pipelines and other ancillary equipment.	
7	General	Provide a decision flow chart for closure of the DST system to include all ancillary equipment including pipelines.	
8	General	Include all Washington Administrative Code citations in the text for closure. All DST components will be closed in accordance with WAC 173-303-610 (2) - (6), - 640(8), and -806 (4) (a).	WAC 173-303-610 (2) - (6), WAC 173-303-640(8), WAC 173-303-806 (4) (a)
9	General	Remove all wording in this chapter that use unenforceable language such as may, might, etc. Replace with shall.	
10	Page 11-1, line 6	Define all acronyms the first time like WUS.	
11	Page 11-1, line 8	Correct text to state Appendix 11 B. Appendix 4E does not identify components to be taken out of service on or before June 30, 2005.	

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No.	Position in Document	Comments/Response Chapter 11	Regulatory Citation
12	Page 11-1, line 11	Change health-based risk numbers regulatory citation to WAC 173-303-610 (2) (b).	
13	Page 11-1, line 14	Change wording of sentence from "As technology" to If technology. Technology may be developed or already be in place to adequately decontaminate soil.	
14	Page 11-1, line 17	Remove the following sentence as it is not accurate. " Based on SST retrieval/closure operations, closure for the DST system may not occur for 30- 40 years." The DST system includes all the components including the components that will be taken out-of-service prior to 2005. These components are required to close in accordance with WAC 173-303-610 (4)(a)(b). "The owner/operator must complete partial and final closure activities in accordance with the approved closure plan and within 180 days after receiving the final volume of dangerous wastes.	WAC 173-303-610 (4)(a)(b)
15	Page 11-1, line 18	Technological advancements may drive other more suitable closure options - What does this sentence mean? The closure chapter has defined three (3) closure pathways clean, modified and landfill. Are there others? Rewrite for clarity and enforceability.	
16	Page 11-1, line 19	Remove all references to cost effectiveness from the chapter or show where the dangerous waste regulations address cost effectiveness as a criterion for developing final closure activities.	
17	Page 11-1, line 28, 29	Remove the following sentence: "Based on the timing for closure much of the closure strategy presented in this chapter is at a conceptual level."	
18	Page 11-1, line 30	Add the following regulatory citations WAC 173-303-640 (8), -806(4)(a)(xiii).	
19	Page 11-1, line 34	Change the sentence to: The DST system will comply with the closure performance standards required by WAC 173-303-610 (2).	
20	Section 11.2.1	This section does not tell how the need for further maintenance will be accomplished. The statement that "the unit specific requirements will be developed as closure plans are developed." does not meet the WAC -610 (3) (a). A closure plan must be submitted with the permit application. The DST system is a separate "assumed" compliant system that may follow a different closure path than the SSTs. Submit a complete closure plan.	WAC 173-303-806 (4)(a)(xiii)
21	Section 11.2.2	This section does not explain how Human Health and the Environment will be protected. Describe how the closing of the DSTs meet the closure performance standards to protect human health and the environment?	
22	Section 11.3 Page 11-2, line 19-21	Remove the following sentence: "Due to the uncertainty associated with the schedule for closure, numeric clean-up standards for soil groundwater and air will be determined closer to the actual time of closure." Replace the sentence with the following: The soil clean-up standards will comply with WAC 173-303-610(2)(b)(i).	WAC 173-303-610(2)(b)(i)

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No.	Position in Document	Comments/Response Chapter 11	Regulatory Citation
23	Page 11-2, line 23-24	Submit numeric clean up levels using WAC 173-340 MTCA Method B. (These have been developed for SST's and should be available and applicable for DSTs.)	WAC 172-303-610 (2)
24	Page 11-2, line 24	Replace the sentence with: Clean-up of contaminated soil shall use a permanent solution to the maximum extent practicable (WAC 173-340-360 (2)(b)(i) and -360(3)). If not all contaminated soils can be practicably removed or decontaminated then post closure care must be preformed in accordance to WAC 173-303-665(6) and the tank system must meet the requirements specified in WAC 173-303-610 and -620.	WAC 173-340-360 (2)(b)(i), -360(3), WAC -640 (8) (b)
25	Page 11-2, line 25-27	Remove the sentence: "Areas of the DST system with soil contaminated above numeric stds ... etc."	WAC 173-340-360(3)
26	Page 11-2, line 29-30	Substantiate the statement that any groundwater contaminated under the DSTs is thought to be migrating from leaking SSTs.	
27	Page 11-2, line 30-32	Remove the sentence: "However ground water monitoring will be conducted ... etc." Replace the sentence with the following: If the DST system is unable to clean close then groundwater monitoring will be required for post closure care. Also, groundwater monitoring can be required under the circumstances described in the chapter 5 NODs.	
28	Page 11-2, line 35-42	Comment Section 11.3, page 11-2, 4th paragraph: The use of dangerous waste identified in the part A as a basis for non-radioactive emission [estimates] is not adequate. The part A does not specifically identify a number of compounds that are or could be present in the waste. All toxic constituents resulting from the closure process must be listed and their emission rates must be known/estimated as a function of time. For example, N-nitrosodimethylamine is an important toxic air pollutant, but is not represented by a waste code on the part A directly. Even if it were to be an Underlying Hazardous Constituent of the waste it would not be identified in the part A."	
29	Page 11-3, line 4-9	Clarify for enforceability. Poorly written, unclear.	
30	Page 11-3, line 31, 32	The application states that some areas of soil contamination associated with leaks from ancillary equipment probably will require landfill closure. Document in the appendix of releases the leaks that have occurred from the ancillary equipment which may require landfill closure and justify why they cannot be removed.	

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No.	Position in Document	Comments/Response Chapter 11	Regulatory Citation
31	Section 11.4	The isolation of DST system components (tanks, pipelines, ancillary equipment) is a closure action. Give a schedule for closure for all pre-2005 ancillary equipment and pipelines. WAC 173-303-610 (4)(a) states that within 90 days after receiving the final volume of waste, the owner or operator must treat, remove from the unit or facility, or dispose of on site, all dangerous waste in accordance with the approved closure plan. WAC 173-303-610(4)(b) states that the equipment must be closed within 180 days after receiving the final volume of dangerous waste. Ecology may approve an extension to the closure period if the owner or operator complies with all applicable requirements for requesting a modification to the permit and demonstrates that he has taken and will continue to take all steps to prevent threats to human health and the environment from the unclosed but not operating dangerous waste management unit or facility.	WAC 173-303-610 (4)(a) & (b)
32	Page 11-4, line 2	Correct line 2. Closure for the 204-AR WUS will include meeting tank standards (see section 11.4.1). No Section exists called 11.4.1	
33	Page 11-4, line 22-23	Replace the sentence with: Some DST system components for which DOE is not seeking a final RCRA Part B permit will be closed under the final status SST Closure Plan. These components have been identified in the Appendix 11B.	
34	Section 11.5.1.1, Page 11-4	Insert all the information required by the Washington Administrative Code. This section on the 204-AR Waste Unloading Station does not contain enough information to meet the requirements of WAC -610 (3) (a).	WAC 173-303-610 (3) (a)
35	Section 11.5.2 Page 11-4	Retrieval is a closure action. This section is the start of the guidance section [I-1b (2)]. Move section 11.6 - Maximum Extent of Operation [I-1b(1)] on page 11-6 before this section. Waste retrieval from the DSTs to the Waste Treatment Plant needs to be addressed in this section.	
36	Page 11-4, line 39-42	Remove this statement about alternative treatments as Ecology has not approved this pathway for waste.	
37	Section 11.5.3, Page 11-5	Remove the wording that is not enforceable such as "would be" and change to "will be".	
38	Section 11.5.4	Clarify the regulatory requirement that section 11.5.4 is meeting. The title on the section is confusing. Is this section describing the removal of tanks and soil under tanks?	
39	Page 11-5, line 21	Remove SSTs. The statement that tanks and ancillary equipment must be removed to accomplish clean closure is incorrect. Tanks and equipment can remain in place if they are decontaminated to a "clean debris surface" as defined in 40 CFR 268.45 and the wastes are managed as dangerous wastes.	WAC 173-303-640 (8)(a). WAC 173-303-610(2)(b)

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No.	Position in Document	Comments/Response Chapter 11	Regulatory Citation
40	Page 11-5, line 21	<p>The excavation of all soil in the tank farms down to the soil/groundwater interface is an odd statement. This statement seems to suggest that large releases have occurred which have impacted the vadose zone and groundwater. Is this true for the DST system?</p> <p>Replace the statement with: The soil will be cleaned-up to meet performance standards required by WAC 173-303-610 (2) using a permanent solution to the maximum extent practicable in accordance with WAC 173-340-360 (2)(b)(i) and -360(3).</p>	<p>WAC 173-303-610 (2)</p> <p>WAC 173-340-360 (2)(b)(i) and -360(3)</p>
41	Page 11-5, line 48	Please clarify the sentence. Appendix 11A does not describe technology. Appendix 11A describes releases.	
42	Section 11.5.6	Re-write the text to specify that the postclosure care period will occur for "a minimum of 30-years" as determined by Ecology at closure. The text identifies that the land disposal units will have a "functioning groundwater monitoring system during the 30-year postclosure period." WAC 173-303-610(7)(b)(ii) provides for extending the postclosure care period if it is found that the extended period is necessary to protect human health and the environment. However, if clean closure is achieved postclosure care is not required.	WAC 173-303-610 (7).
43	Page 11-6, line 16-18	Replace the paragraph with the following: It is anticipated that the DST system will remain sound and clean closure will be pursued to the limits of technology. However, if clean closure cannot be achieved landfill closure and postclosure care will be required.	
44	Page 11-6, line 20	Replace the 1st sentence with the following: Once the Double Shell Tanks have been retrieved and emptied to the limits of technology then tank stabilization will need to be accomplished. Possible materials that could be used to accomplish tank stabilization are grout or other structural material as described.	
45	Section 11.7	Provide details with diagrams on the transferring of waste to the Waste Treatment Plant (WTP). This section does not address the removal of DST waste to the WTP. How will the waste be removed from the DST? The current retrieval information describes a SST retrieval.	WAC-610 (3) (a)(iv)
46	Section 11.7, Page 11-7, line 2-4	Reword the paragraph as follows: Closure of the DST system will include the removal of as much supernatant, sludge, and hard heel waste from the tanks, ancillary equipment, pipelines and contaminated soil using the limits of technology.	
47	Page 11-7, line 13-17	This paragraph does not make clear that the permit application is for the DST system. Please clarify for enforceability.	
48	Section 11.8, Page 11-8, line 11 - 30	Rewrite the description of the three options for treating hazardous debris as worded in the Ecology "Guidance for Clean Closure of Dangerous Waste Facilities" August 1994, Publication #94-111.	

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No.	Position in Document	Comments/Response Chapter 11	Regulatory Citation
49	Page 11-8, line 34, 35,36	Rewrite sentence as follows: "For contaminated media the contained-in policy requires that an Ecology approved statistically based sampling plan be utilized for obtaining the data to support a contained-in demonstration."	
50	Page 11-9, line 9	Provide the sampling methodology document that is referenced for Ecology review (DOE/RL91-28) or a description of the documents methodology. Ecology also has a guidance document for sampling called "Guidance on Sampling and Data Analysis Methods, publication # 94-49.	WAC 173-303-610(3)(a)(vi)
51	Section 11.9, Page 11-9	The permit application is missing the sampling plan to determine extent of contamination and to confirm decontamination of structures and soils as required by WAC 173-303-610 (3)(a)(v) of a closure plan.	WAC 173-303-610 (3)(a)(v)
52	Section 11.10, line 14-17	Clarify the statement about the 242-A Evaporator being evaluated for concentration of DST system waste. Doesn't the 242-A Evaporator currently concentrate DST waste?	
53	Section 11.10, Page 11-10	Provide a schedule for closure of the DST systems including ancillary equipment both pre and post 2005 system components. WAC 173-303-610 (3)(a)(vii) requires a closure schedule. The DST closure schedule must be provided with the permit. The closure schedule then can be changed through the permit modification in accordance with the applicable procedures in WAC 173-303-800 and -840.	WAC 173-303-610 (3)(a)(vii)
54	Section 11.10, Page 11-9, 2 nd Paragraph	Revise section 11.10.1 paragraph 2 to read: Typical methods being used for tank waste sampling include gas phase samplers/monitors, liquid grab sampler, auger sludge sampler, and push and rotary sludge/saltcake sampling. Characterization of tank waste is done in accordance to specific Data Quality Objective (DQO). Once retrieval of sludge and supernatant is complete, the hard-heel residual waste will require sampling to determine the appropriate treatment process.	
55	Section 11.16	Remove all references to post closure. The information is incomplete and it is not required at this time for a non-regulated unit. Information currently located in chapter 5 is on post closure care and also needs to be removed.	WAC 173-303-640(8)(b), -665(6), -610 (7,8,9,10,11)
56	Section 11.16, line 21-25	Replace with the following: Post-closure care is required when dangerous wastes or waste residues are left in place at a closed dangerous waste management unit. Ecology considers dangerous wastes or waste residues left in place when dangerous waste constituents, residues, or decomposition products at the closed unit remain at concentrations above numeric cleanup levels determined using residential exposure assumptions under MTCA method A or B.	Wording from the Ecology "Guidance for Clean Closure of Dangerous Waste Facilities"

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No.	Position in Document	Comments/Response Chapter 12	Regulatory Citation
1	Chapter 12 Page 12-1, line 2	Insert the following paragraph on line 2: "The Double Shell Tank (DST) System is subject to the reporting and recordkeeping requirements of Dangerous Waste Regulations (WAC 173-303), Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities (40 CFR 264), and Land Disposal Restrictions (40 CFR 268)."	
2	Page 12-1, line 2	Line 2, modify text to read: "Reporting are recordkeeping requirements that could be are applicable to the Hanford...."	
3	Page 12-1, line 3	Line 3, modify text to read: "...Chapter 12.0 of the Hanford Facility Dangerous Waste Permit Application General Information ..."	
4	Page 12-1, line 2	Add the following reporting and recordkeeping requirements to the first bulleted list: Closure plan changes; Monitoring and records; Certification of construction or modifications; Reporting planned changes; Engineering change notices and nonconformance reports; As-built drawings; Equivalent materials; Schedule extensions; Occurrence reports; Deed notification and closure certification; Waste location; and Waste analysis and analytical data.	WAC 173-303-380
5	Page 12-1, line 2	Add the following reporting and recordkeeping requirements to the second bulleted list: Annual noncompliance report, Annual dangerous waste report, and Annual land disposal restriction report.	WAC 173-303-390

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No.	Position in Document	Comments/Response Chapter 13	Regulatory Citation
1	Chapter 13	Modify text on line 2 to read: "...DST System is discussed in Chapter 13 of the Hanford Facility Dangerous Waste Permit Application General Information Portion...."	
2	Chapter 13	After each applicable law add the text ", as amended."	
3	Chapter 13	Add the following applicable law: "Model Toxics Control Act, as amended"	WAC 173-303-806(4)(a)(xix)

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No.	Position in Document	Comments/Response Appendix 4A	Regulatory Citation
1	Appendix 4A General	The report "Evaluation of Insulating Concrete in Hanford Double-Shell Tanks" RPP-19097, Rev. 0 makes several recommendation to evaluate any trend toward deterioration of the insulating concrete of the Double-shell tank. Include these recommendations in the ongoing tank integrity program.	
2	General	The integrity assessment must characterize the effects of leaks and spills (from tank pits and operations) on the secondary containment. This information is important to assure that has not been compromised.	
3	General	Seismic design of piping systems: The plan should clarify what magnitude earth quake the piping and riser penetrations of tanks can survive.	
4	Page 20 6 th Paragraph	Explain why the 241-AY tanks were chosen as the model to represent the structural analysis for all DSTs. How does the 241-AY tank contain the bounding features for all 28 DSTs?	

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No.	Position in Document	Comments/Response Appendix 4B	Regulatory Citation
1	Appendix 4B Page iii, 3 rd Paragraph	Remove the following sentence: "As they become updated they will be submitted to Ecology outside of the permitting process." Replace with the following: As they become updated they will be submitted to Ecology as a permit modification request as per WAC 173-303-830.	WAC 173-303-830

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No.	Position in Document	Comments/Response Appendix 6 A	Regulatory Citation
1	Appendix 6A General	What is the intended purpose of this Appendix?	
2	General	Provide a table of contents for Appendix 6A.	
3	Page 6A-3	In column titled "Equipment Information" first box regarding AN tanks, a statement is made that "conductivity probes not at specified elevation". Explain this statement. Is this a current condition of the equipment requiring repair?	
3	Tables 6A-1 through 6A-12	Descriptions of frequencies at which monitoring equipment is calibrated or functionally tested to ensure operability is either inconsistent or does not appear at all for most equipment. For example, the Inspection and Monitoring column notes that annulus leak detectors for DSTs are functionally tested every 182 days; however, no reference is made to functionally testing the various types of leak detectors in catch tanks, transfer lines, DCRTs, valve pits or other tank system equipment. Add the information.	
4	Tables 6A-1 through 6A-12	The information presented in the column "Conditions/Required Response" is unclear and appears inconsistent. For example, most entries describe responses to an alarming leak detectors; however, some entries describe equipment as malfunctioning or inoperable (i.e. see page 6A-9, bottom row for annulus leak detectors which state, "conductivity probes are malfunctioning"). What is the specific purpose for this column?	
5	Table 6A-13, Cathodic Protection	The Condition/Required Response column lists rectifiers requiring maintenance or repair; however, the "response" is simply reporting to management rather than providing schedules for repair. Are the rectifiers currently inoperable or maintained? Also, this table does not reference calibration schedules for rectifiers (i.e. tap settings annually adjusted to survey test results from test stations). Add this information to the table.	
6	Table 6A-13 Cathodic Protection	Polarization potential surveys for the cathodic protection system must be included as part of the inspection schedule.	
7	Appendix 6A	Appendix 6 does not reference temporary equipment that may be used in the DST system (i.e. temporary, hose-in-hose transfer lines). Provide information in the text.	
8	Appendix 6A	Provide text for the leak detection devices that states, "The frequency of calibration for leak detection devices will not exceed 12 months. The calibration of leak detection devices will occur more often than every 12 months based on manufactures recommendations.	

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No.	Position in Document	Comments/Response Appendix 11A	Regulatory Citation
1	Appendix 11A, Page APP 11A-1, Lines 3-4	The text states: "No liquid releases have occurred from the DSTs or 204-AR." Washington Administrative Code (WAC) 173-303-040 definition of "tank" is: "a stationary device designed to contain an accumulation of dangerous waste, and which is constructed of non-earthen materials to provide structural support". The WAC 173-303-040 definition of "tank system" is "a dangerous waste storage or treatment tank and its associated ancillary equipment and containment system". The 204-AR is considered "ancillary equipment" rather than a "tank". Remove "or 204-AR" from the first sentence.	806(4)(a)(xxiii) and (xxiv)
2	Appendix 11A, Known Releases, Page APP 11A-1, lines 3-4	The text states: "No liquid releases have occurred from the DSTs or 204-AR." A more accurate statement is: "No known liquid releases have occurred from the DSTs." Unless the leak detection capabilities are agreed to satisfy WAC 173-303-400(3) and, by reference, 40 Code of Federal Regulations (CFR) 265.193 standards, the statement, as written, is not supported. Re-write the sentence to indicate that there are no "known" releases from the DSTs.	806(4)(a)(xxiii) and (xxiv)
3	Appendix 11A, Known Releases, Page APP 11A-1, line 6	General Comment. The text states: "Release information is tracked through a sitewide database." It should be noted that the sitewide database is not easy to use and all the information provided in Appendix 11A regarding known releases could not be confirmed and/or evaluated. To explain, unplanned release UPR-200-W-20 is not numerically listed in Hanford Site Waste Management Units Report (DOE/RL-88-30, Rev. 12). When the WIDS database was searched for the UPR-200-W-20, the description of the unit was found. As another example of how the WIDS database is not easy to use, unless it can be ascertained that the release occurred in a DST system component, it is difficult to know if the unplanned release is within the DST system. It is recommended that the information in this appendix be considered "pending" until such time that Ecology reviewers may improve their capabilities in confirming and evaluating information via the use of Hanford Site databases.	806(4)(a)(xxiii) and (xxiv)
4	Appendix 11A, Known Releases, Page APP 11A-1, line 6	General Comment. It is recommended that an identification that the WIDS database includes an identification of solid waste management units (SWMUs) be included in the appendix with an explanation that the entire DST system is considered a SWMU.	806(4)(a)(xxiii) and (xxiv)
5	Appendix 11A, Known Releases, Page APP 11A-1 – 4	General Comment. While the WIDS provides Washington State Plane coordinates as the location for the various unplanned releases, it is unknown if the unplanned releases are located within DST system boundaries. After the DST System boundaries are defined for purposes of permitting, maps should be provided which show the location (in relation to the DST System) of the releases.	806(4)(a)(xxiii) and (xxiv)

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No.	Position in Document	Comments/Response Appendix 11A	Regulatory Citation
6	Appendix 11A, Known Releases, Page APP 11A-1 – 4	Provide topographical maps which show the location of all known releases. While the Waste Information Data System (WIDS) provides Washington State Plane coordinates as the location for the various unplanned releases, it is unknown if the unplanned releases are located within DST system boundaries.	806(4)(a)(xxiii) and (xxiv)
7	Appendix 11A, Known Releases, Page APP 11A-1 – 4	General Comment. The known releases are described and the limitation of the documentation is disclaimed on line 10 by the following statement: "Documentation on releases are incomplete." In general, the appendix lacks descriptions of contamination characterization. Characterization information is needed to assist Ecology in assessing the need for corrective action in relation to the releases. The final status DST permit is supposed to include specific requirements for corrective action along with a schedule for completing corrective action activities. The lack of information and characterization in relation to the releases is a significant deficiency.	806(4)(a)(xxiii) and (xxiv)
8	Appendix 11A, Known Releases, Page APP 11A-1 – 4	The appendix lacks descriptions of contamination characterization. At a minimum, for each release, the following information should be provided: 1) location of the release on a topographic map 2) extent of the release and the dangerous constituents present 3) results of sampling and analysis of the release or its source 4) impacts or potential impacts to humans or the environment 5) the period over which the release occurred 6) any other information that supports the corrective action decision-making process	806(4)(a)(xxiii) and (xxiv)
9	Appendix 11A, Known Releases, Pages APP 11A-1 - 4 General Comment	Included in site description/comment of the WIDS information (general summary reports) are indications that over the years there have been multiple releases associated with DST system components which are documented. Appendix 11A should include a description of such documentation which includes references where the information may be retrieved.	806(4)(a)(xxiii) and (xxiv)
10	Appendix 11A, Known Releases, Pages APP 11A-1 – 4 General Comment	Included in site description/comment of the WIDS information (general summary reports) are indication that over the years there have been multiple releases associated with DST system piping. Information obtained during pipe testing indicating pipe failure (i.e., integrity assessment, standard operating procedures, system readiness testing, etc.) must be provided, with references, in Appendix 11A. In addition, for pipe sections that have failed testing, the location of the failed pipe testing should be identified on a map as a location of a potential release.	806(4)(a)(xxiii) and (xxiv)

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No.	Position in Document	Comments/Response Appendix 11A	Regulatory Citation
11	Appendix 11A, Known Releases, Pages APP 11A-1 – 4 General Comment	A review of the WIDS information (general summary reports) indicates that many of the sites of releases are not specifically marked or posted. Similarly, the WIDS information often indicates that the Solid Waste Management Unit (SWMU) occurs inside a marked or posted area and the unplanned release is not marked or posted. A map showing the locations of the unplanned releases must be submitted. If such information cannot be retrieved, a schedule for characterizing contamination for purposes of delineating the SWMUs must be included in Chapter 11.	806(4)(a)(xxiii) and (xxiv)
12	Appendix 11A, Known Releases, Pages APP 11A-1 – 4 General Comment	Due to the lack of SWMU characterization information, radiological survey information is requested for the entire DST system. This information will reduce the need for extensive soil sampling for contaminants of concern. If a database exists which tracks radiological surveys associated with SWMUs, the database should be identified in Appendix 11A. Also, if a database exists which tracks radiological surveys associated with SWMUs the information available regarding the DST system must be summarized in Appendix 11A.	
13	Appendix 11A, Known Releases, Page APP 11A-1 – 4. General Comment.	The text indicates that "Release information is tracked through a sitewide database." Other Hanford Site databases and information sources may be reviewed for additional information that should be included in Appendix 11A. For example, the Hanford Site Atlas (BHI-01119 Rev. 1) contains a map of the 241-AP Tank Farm that indicates locations of soil borings. In an attempt to obtain the soil boring information, the Hanford Environmental Information System (HEIS) was queried without success. Further attempt to obtain the information yielded drill logs and well completion reports for the soil borings. From the well completion report, it is indicated that the purpose for the well is: "stratigraphy identification and radiological assessment". It is understood that information from soil borings is supposed to be maintained in the Hanford Environmental Information System (HEIS) database. However, the HEIS neither included information about the soil borings or information obtained during the radiological assessment. All information available should be provided. Also, information as described above should be available from Hanford databases.	806(4)(a)(xxiii) and (xxiv)

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No.	Position in Document	Comments/Response Appendix 11B	Regulatory Citations
1	General - Appendix 11B	Justify DST components located within the boundaries of the DST having a final disposition in the SST closure plan.	